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Rhexoacrodictys broussonetiae sp. nov. from Guizhou, China

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Abstract—A new hyphomycete, *Rhexoacrodictys broussonetiae* is described and illustrated from specimens collected on dead *Broussonetia papyrifera* stems in Guizhou Province, China. It is characterized by distinct, unbranched conidiophores with monoblastic, percurrently extending conidiogenous cells that produce acrogenous, subspherical to spherical, 17–28 × 19–31 µm, 0–2 transversely septate conidia with several additional oblique longitudinal septa. A dichotomous key to the four *Rhexoacrodictys* species is provided.

Key words—*Acrodictys,* anamorphic fungi, *Ascomycota,* taxonomy

Introduction

Baker & Morgan-Jones (2002) established *Rhexoacrodictys* to accommodate four *Acrodictys* species: *R. erecta* (Ellis & Everh.) W.A. Baker & Morgan-Jones, *R. fimicola* (M.B. Ellis & Gunnell) W.A. Baker & Morgan-Jones, *R. fuliginosa* (B. Sutton) W.A. Baker & Morgan-Jones, and *R. queenslandica* (Matsush.) W.A. Baker & Morgan-Jones. Delgado (2009) later proposed the combination *R. martinii* (J.L. Crane & Dumont) G. Delgado, but Xia & al. (2017) transferred *R. martinii* to *Distoseptispora* and *R. queenslandica* to *Junewangia*, based on morphology and phylogenetic analysis. Thus, *Rhexoacrodictys* currently contains only three accepted species, which are mainly characterized by

indeterminate and regeneratively percurrently extending conidiogenous cells that often acquire a narrow circumscissile dehiscence zone at the extreme apex. The conidia, which are ellipsoid, ovoid, subspherical to spherical, transversely, longitudinally and obliquely septate, undergo rhexolytic conidial secession.

During ongoing surveys of saprobic microfungi from the subtropical forests of Guizhou Province, China, a *Rhexoacrodictys* specimen collected on dead stems of *Broussonetia papyrifera* was found to differ from all accepted *Rhexoacrodictys* taxa and is proposed here as a new species, *R. broussonetiae*. The holotype is deposited in the Mycological Herbarium of Zunyi Normal College, Zunyi, China (HMZNC).

Rhexoacrodictys broussonetiae Xiao X. Li & Z.J. Xiao, **sp. nov.** Fig. 1

FungalName FN570519

Differs from all other *Rhexoacrodictys* species by its subspherical to spherical conidia.

Type: China, Guizhou Province: Xishui National Nature Reserve, on dead stems of *Broussonetia papyrifera* (L.) Vent. (*Moraceae*), 27 Jun. 2017, X.X. Li (**Holotype**, HMZNC 0246).

Etymology: in reference to the host genus, *Broussonetia*.

Colonies on natural substrate effuse, hairy, brown to dark brown. Mycelium partly superficial, partly immersed in the substratum, composed of branched, septate, pale brown to brown, cylindrical, smooth-walled hyphae, 2–4 µm diam. Conidiophores macronematous, mononematous, single or a loose cluster of 2–4, erect, straight or slightly flexuous, cylindrical, smooth, thick-walled, dark brown to blackish, 4–7-septate, 70–119 × 4.5–6.5 µm, inflated toward the base, 6.5–9 µm diam, blackish, tapering slightly, paler brown, indeterminate. Conidiogenous cells integrated, terminal, monoblastic, with a pale brown, narrow circumscissile dehiscence zone at the extreme apex, 3–4.5 µm diam, percurrently extending. Conidial secession rhexolytic. Conidia holoblastic, solitary, acrogenous, subspherical to spherical, with 0–2 transverse septa and several longitudinal and oblique septa, with darkly-pigmented bands over the septa, smooth, brown to dark brown, 17–28 × 19–31 µm, bearing a small marginal frill at the base, 2.5–4.5 µm diam, pale brown.

Comments—*Rhexoacrodictys broussonetiae* produces conidia that are similar in shape to those in *Distoseptispora martinii* (J.L. Crane & Dumont) J.W. Xia & X.G. Zhang, which differ in their (sub)globose to broadly ellipsoidal shape and smaller size (11–16 µm diam.—Delgado 2009; 15–20 × 11–16 µm—Xia & al. 2017). *Rhexoacrodictys broussonetiae* also differs from the other three *Rhexoacrodictys* species, which produce ellipsoid or ovoid conidia.

Fig. 1. *Rhexoacrodictys broussonetiae* (holotype, HMZNC 0246)
A. Conidiophores with conidia; B. Conidiophores and conidiogenous cells; C. Conidia.

Key to *Rhexoacrodictys* species

1. Conidia dictyosporous, subglobose to globose (17–28 × 19–31 µm, 0–2 transverse septa) ..... *R. broussonetiae*
1. Conidia dictyosporous, ellipsoid or ovoid 2
2. Conidia without a dark brown apex, more or less evenly pigmented (15–24 × 11–15 µm, 2–3 transverse septa, medium to blackish brown) ..... *R. fimicola*
2. Conidia apically dark brown to black, darker upwards when mature 3
3. Conidia 24–40 × 15–22 µm, septa predominantly oblique, dark brown or black ..... *R. erecta*
3. Conidia 21–26 × 12–16 µm, septa 3(–4) transverse, brown to blackish brown ..... *R. fuliginosa*

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